1/6 The Enzymes of the Shikimate-Pathway

1. 3-Deoxy-D-arabinoheptulosonate-7-Phosphate-Synthase

2. 5-Dehydrochinate-Synthase

3. 5-Dehydrochinate-Dehydrogenase

4. Dehydroshikimate-Dehydrogenase

5. Shikimate-Kinase

6. Englavroyylshikimate 5. Phosphate Synthase D-Erythrose<sup>-4</sup>phosphate ල 6. Enolpyrovylshikimate-5-Phosphate-Synthase 7. Chorismate Synthase Phosphoenolpyruvate 1 HO<sub>Ita</sub> ÇOO 2 3, 4, 5, 6 P° ŌΗ  $\hbox{$3$-Deoxy-D-arabinoheptulosonate-7-Phosphate}$ 5-Dehydrochinate Enolpyrovylshikimate-5-Phosphate cco. Chorismate mutase Prephenate Chorismate Phenylpyruvate СООН ĆOO. Anthranilate Phenylalanine Hydroxyphenylpyruvate Tryptophan. coo. Tyrosine

FIGURE

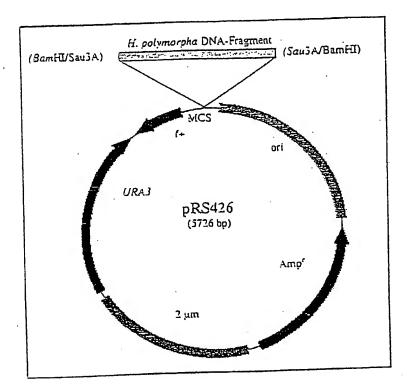


FIGURE 2

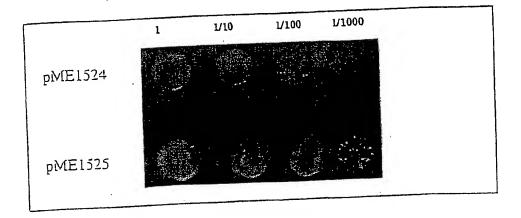


FIGURE 3

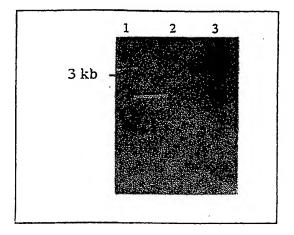


FIGURE 4

cccggcccaatgccagcaatatggagacgtttaggcagaataggcgttccatacttctcacgctgcttgttgcca ccggaatatacaccgcattgcagtttgcacacatcatactatatgacgattacattggcggaacgtatcgcgagt cgctcacgagacgcattagaatgacagagaaatcgcgaaacgaccttatagacgcacgtgaaaactacgggtttg gaggcagcaaggaggagcgaatccagcggtttttgtggtttcagacatctttcgtggcttttaggcgaggataagg aacttgaggagcgtttttttttt<u>Cctqtttaqtttttqtaq</u>gtATGGACTTTATGAAGCCAGAAACAGTGCTGGA MDFMKPETVLD CCTTGGCAACATTAGAGATGCCTTGGTCCGGATGGAGGATACGATCATCTTCAACTTTATCGAGCGGTCGCAGTT L G N I R D A L V R M E D T I I F N F I E R S Q F CTATGCGTCGCCCTCGGTATACAAAGTCAACCAGTTCCCTATTCCCAACTTCGACGGCTCGTTCTTGGACTGGCT Y A S P S V Y K V N Q F P I P N F D G S F L D W L GTTGTCGCAGCACGAGCGAATCCATTCGCAGGTGAGGAGGACGACGACGACGACGACGACGTGCCTTTTTTCCCCAA L S Q H E R I H S Q V R R Y D A P D E V P F F P N CGTGCTGGAAAAAACGTTTCTGCCCAAGATCAACTACCCATCGGTGCTAGCCTCCTACGCGGATGAAATCAACGT V L E K T F L P K I N Y P S V L A S Y A D E I N V N K E I L K I Y T S E I V P G I A A G S G E Q E D CAACCTTGGCTCGTGCGCAATGGCCGACATCGAGTGCCTGCAGTCGCTATCCAGAAGAATCCATTTTGGCCGTTT N L G S C A M A D I E C L Q S L S R R I H F G R F TGTCGCAGAGGCTAAATTTATCAGTGAGGGGGÄCAAGATTGTGGATCTGATCAAAAAGAGAGATGTGGAAAGACGCAT V A E A K F I S E G D K I V D L I K K R D V E G I TGAGGCGCTCATCACAAACGCCGAGGTCGAAAAACGGATCTTGGACAGACTTCTGGAGAAGGGAAGGGCGTATGG EALITNAE VEKRILDRLLEKGRAYG AACAGACCCGACACTAAAGTTCACGCAGCACATTCAGAGCAAGGTGAAGCCCGAGGTGATTGTGAAAATCTACAA T D P T L K F T Q H I Q S K V K P E V I V K I Y K GGATTTCGTGATTCCGCTCACGAAGAAGGTCGAAGTCGACTACTTGCTGAGACGGCTGGAGGACGAGGACGACGA D F V I P L T K K V E V D Y L L R R L E D E E D D  $\underline{\textbf{TGATGCGACGCAGAAAAGC}} \underline{\textbf{GGCGTACGTTGACCGGTTTCTCTCTCTCTCTGCCTTGTACTAGaaaattaaaattttc} \\$ DATQKSGGYVDRFLSSGLY agtactttaattattctcgaattctagttcagataccgcatggtaatttcaaaaggccagaaaagtggccgcgttg gctggggcagctctcagaatagtcggcgagaatcctttgactagccccaggcaccgctctgtctccaaataccc ctaatagtctcaacagcatttctataaaccagcttcttgtagttgtccgtctgcatgttggacttgatcacatcg atcggataaatactgaaccacatcccgtaacctgccagcgccccaaagacgcagagcttccagttctcgatgtcc ttcctggcaatattccgcgactcgatctcgtttttcacgagagcttcaaaagtcagaaaatacgctccgctaccc aaactttctcttgccagcgtaggtcccagaccccggtagattaacttgatgcctcccgtatggtacagcttcttg atcc

## FIGURE 5

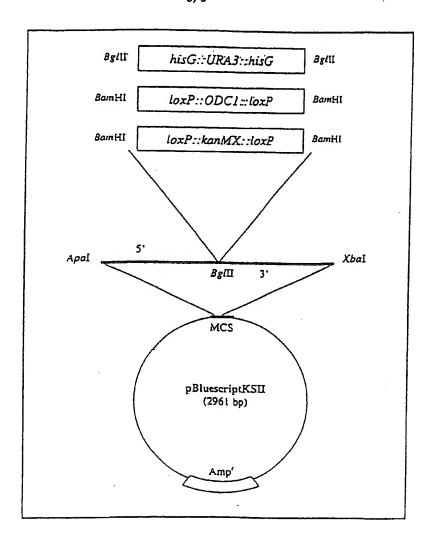


FIGURE 6

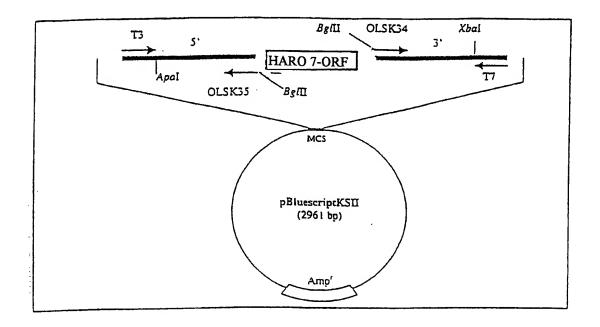


FIGURE 7